

AMENDMENTS TO THE CLAIMS

Please amend Claims 1-38 and add Claims 39-42 as shown below. This listing of claims will replace all prior versions, and listings, of claims in the international application.

Claims

1. (Currently amended) An imaging device comprising at least two image capturing apparatus, each apparatus being arranged to produce an image comprising pixels, the apparatus being configured to utilize at least a portion of the images produced with different image capturing apparatus with each other to produce an image with an enhanced image quality, ~~characterized in that~~ wherein at least one image capturing apparatus has a different light gathering capability and ~~that~~ the image produced by the at least one apparatus is used for enhancing the dynamic range of the image produced with the other image capturing apparatus by combining at least a portion of the images using an averaging method for each pixel to be combined.
2. (Currently amended) The device of claim 1, ~~characterized by the apparatus being comprising an image capturing apparatus~~ configured to analyse the images produced with the image capturing apparatus and to determine which portions of an image to utilize.
3. (Currently amended) The device of claim 1, ~~characterized by the comprising an image capturing apparatus being~~ configured to combine at least a portion of the images produced with different image capturing apparatus with each other.
4. (Currently amended) The device of claim 1, ~~characterized in that~~ wherein at least one image capturing apparatus has a small aperture.

5. (Currently amended) The device of claim 1, ~~characterized in that~~ wherein at least one image capturing apparatus has higher aperture than other apparatus.

6. (Currently amended) The device of claim 1, ~~characterized by the~~ comprising an image capturing apparatus being configured to utilise a weighted mean method for each pixel to be combined.

7. (Currently amended) The device of claim 1, ~~characterized in that~~ wherein at least one image capturing apparatus comprises a polarisation filter.

8. (Currently amended) The device of claim 1, ~~characterized in that~~ wherein the image capturing apparatus comprise a lens system and a sensor array configured to produce electric signal and that the device comprises a processor operationally connected to the sensor arrays and configured to produce an image proportional to the electrical signal received from the sensor arrays.

9. (Currently amended) The device of claim 8, ~~characterized in that~~ the device comprises comprising a sensor array divided between at least two image capturing apparatus.

10. (Currently amended) The device of claim 1, ~~characterized by the~~ comprising a lenslet array with at least four lenses.

11. (Currently amended) The device of claim 8, ~~characterized in that~~ the device comprises comprising a sensor array and four image capturing apparatus, each apparatus using one lens from the lenslet array and a portion of the sensor array.

12. (Currently amended) The device of claim 9, ~~characterized in that~~ wherein three image capturing apparatus are configured to produce a colour image; that the fourth image capturing apparatus is configured to produce an image; and the device comprises a processor configured to combine at least a portion of the images with each other to produce an image with an enhanced image quality.

13. (Currently amended) The device of claim 10, ~~characterized in that~~ wherein the three image capturing apparatus each comprise an unique colour filter from a group of filters red, green or blue.

14. (Currently amended) The device of claim 10, ~~characterized in that~~ wherein each of the three image capturing apparatus comprises a unique colour filter from a group of filters cyan, magenta or yellow.

15. (Currently amended) The device of claim 12, ~~characterized in that~~ wherein the fourth image capturing apparatus comprises a Bayer matrix.

16. (Currently amended) The device of claim 12, ~~characterized in that~~ wherein the fourth image capturing apparatus produces infra-red images.

17. (Currently amended) The device of claim 1, ~~characterized in that~~ comprising at least one image capturing apparatus shielded for producing a dark reference.

18. (Currently amended) The device of claim 1, ~~characterized in that~~ comprising at least one image capturing apparatus is configured to measure white balance.

19. (Currently amended) The device of claim 1, ~~characterized in that~~ comprising at least one image capturing apparatus configured to measure exposure parameters.

20. (Currently amended) The device of claim 1, ~~characterized in that~~ comprising at least one image capturing apparatus comprising a polarization filter.

21. (Currently amended) The device of claim 1, ~~characterized in that~~ the fourth image capturing apparatus comprising at least one image capturing apparatus configured to produce [[s]] images from which a specific light polarization direction has been removed.

22.. (Currently amended) The device of claim 1, ~~characterized in that wherein~~ each image capturing apparatus comprises a different aperture and is dedicated to a different spectral band.

23. (Currently amended) The device of claim 1, ~~characterized in that wherein~~ each image capturing apparatus comprises a lens arrangement.

24. (Currently amended) The device of claim 1, ~~characterized in that wherein~~ at least one image capturing apparatus is configured to use a different exposure time compared to other apparatus.

25. (Currently amended) A method of creating an image file in an imaging device, comprising producing images comprising pixels with at least two image capturing apparatus, utilising at least a portion of the images produced with different image capturing apparatus with each other to produce an image with an enhanced image quality, ~~characterized by~~ producing images with image capturing apparatus of a different light gathering capability and combining at least a portion of the images using an averaging method for each pixel to be combined.

26. (Currently amended) The method of claim 25, ~~characterized by~~ further comprising:

analysing the images produced with the image capturing apparatus and determining which portions of the images to utilize.

27. (Currently amended) The method of claim 25, ~~characterized by~~ wherein the combining is made using a weighted mean method for each pixel to be combined.

28. (Currently amended) The method of claim 25, ~~characterized by~~ further comprising:

producing images with image capturing apparatus comprising a lens system and a sensor array configured to produce an electric signal and processing the images proportional to the electric signal with a processor operationally connected to the sensor arrays.

29. (Currently amended) The method of claim 25, ~~characterized by further comprising:~~ producing images with a sensor array and four image capturing apparatus, each apparatus using one lens from the lenslet array and a portion of the sensor array.

30. (Currently amended) The method of claim 29, ~~characterized by further comprising:~~

producing a colour image with three image capturing apparatus,
producing an image with the fourth image capturing apparatus and
combining at least a portion of the images with each other to produce an image with an enhanced image quality.

31. (Currently amended) The method of claim 30, ~~characterized by further comprising:~~ producing a colour image with the fourth capturing apparatus by using a Bayer matrix filter.

32. (Currently amended) The method of claim 30, ~~characterized by further comprising:~~ producing an infra-red image with the fourth capturing apparatus.

33. (Currently amended) The method of claim 25, ~~characterized by further comprising:~~ combining at least a portion of the images produced with different image capturing apparatus with each other.

34. (Currently amended) The method of claim 25, ~~characterized by further comprising:~~ using at least one image capturing apparatus for producing a dark reference.

35. (Currently amended) The method of claim 25, ~~characterized by further comprising:~~ using at least one image capturing apparatus for measuring white balance.

36. (Currently amended) The method of claim 25, ~~characterized by further comprising:~~ using at least one image capturing apparatus for measuring exposure parameters.

37. (Currently amended) The method of claim 25, ~~characterized by further comprising:~~ using at least one image capturing apparatus for producing images from which a specific light polarization direction has been removed.

38. (Currently amended) The method of claim 25, ~~characterized that further comprising:~~ producing images by each image capturing apparatus produces images with a lens arrangement of its own.

39. (New) An imaging device comprising at least two image capturing apparatus, each apparatus being arranged to produce an image, where in at least one image capturing apparatus is used for measuring exposure parameters.

40. (New) The imaging device of claim 39, comprising at least four image capturing apparatus, wherein three image capturing apparatus each comprise an unique colour filter from a group of filters red, green or blue or from a group filters cyan, magenta or yellow.

41. (New) An imaging device comprising at least two image capturing apparatus and a sensor array configured to produce an electric signal when exposed to light, the sensor array being divided between at least two image capturing apparatus.

42. (New) A method of creating an image file in an imaging device, comprising producing images with at least two image capturing apparatus and using at least one image capturing apparatus for measuring exposure parameters.